UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 09/851,131 | 05/09/2001 | Renzo Bignazzi | 208326US0 | 2681 |

22850 7590 05/24/2002

OBLON SPIVAK MCCLELLAND MAIER & NEUSTADT PC
FOURTH FLOOR
1755 JEFFERSON DAVIS HIGHWAY
ARLINGTON, VA 22202

| EXAMINER | |
|---|---|
| NGUYEN, TAM M | |
| ART UNIT | PAPER NUMBER |
| 1764 | 7 |

DATE MAILED: 05/24/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) |
|---|---|---|
| | 09/851,131 | BIGNAZZI ET AL. |
| | Examin r | Art Unit |
| | Tam M. Nguyen | 1764 |

*-- The MAILING DATE of this communication app ars on the cover sheet with th correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *09 May 2001* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-5* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *4* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

## DETAILED ACTION

### *Claim Objections*

Claims 3-5 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim should refer to other claims in the alternative only. See MPEP § 608.01(n).

The examiner suggests that claim 2 be amended to specifically recite that it depends on claim 1.

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "the mixture" in line 5. There is insufficient antecedent basis for this limitation in the claim.

Claim 1 recites the limitation "the first eutectic" in line 6. There is insufficient antecedent basis for this limitation in the claim.

Claim 1 recites the limitation "the mother liquid" in line 7. There is insufficient antecedent basis for this limitation in the claim.

Claim 1 recites the limitation "the solid obtained" in line 8. There is insufficient antecedent basis for this limitation in the claim.

The expression "filtration" in the last line of claim 1 renders the clam indefinite because it is unclear what components are to be filtered.

The expression "crystallization by cooling" in line 9 of claim 1, renders the claim indefinite because it is unclear if the crystallization by cooling in line 9 of claim 1 is the same as the crystallization and the cooling steps in lines 4 and 5 of claim 1.

Claim 2 recites the limitation "the starting mixture" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim 2 recites the limitation "the eutectic ratio" in line 4. There is insufficient antecedent basis for this limitation in the claim.

Claim 2 recites the limitation "the other isomers" in lines 4-5. There is insufficient antecedent basis for this limitation in the claim.

The expression "the same in a concentration higher than the eutectic ratios with the other isomers" in lines 3-5 of claim 2, renders the claim indefinite because it is unclear what applicants intend to claim. Appropriate correction is required.

Claim 3 recites the limitation "the operations listed" in lines 3-4. There is insufficient antecedent basis for this limitation in the claim.

Claim 4 recites the limitation "the various operations" in line 3-4. There is insufficient antecedent basis for this limitation in the claim.

Regarding claim 5, the word "preferably" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2 and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Takagawa et al. (EP-792858).

Takagawa discloses a process for separating 2,6-dimethylnaphthalene (2,6-DMN) from its isomers by passing a feeding mixture of 2,6-DMN and its isomers into a crystallization zone which is operated at a temperature of $25^0$ C and in the presence of a solvent to form a crystal and a mother liquid mixture. The crystal is then filtered and rinsed to separate it from the liquid mother. Takagawa also discloses that the solvent used in the rinsing step is the same as the solvent in the crystallization step. It is noted that Takagawa does not specifically disclose that the feeding mixture is cooled to a temperature higher than the formation value of the first eutectic in the crystallization zone. However, Takagawa discloses that the feeding mixture is cooled at $25^0$ C in the crystallization step and the cooling temperature of Takagawa is the same as the cooling temperature of the claimed process as disclosed in the present specification. Therefore, the limitation is embraced by the reference. (See page 7, lines 29-53)

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takagawa et al. (EP-792858) in view of Munson et al. (6,057,487)

Takagawa does not disclose that the solvent is an alcohol such as methanol. However, Munson discloses a process of crystallization of 2,6-DMN in the presence of methanol or a hydrocarbon (e.g., heptane) (See col. 5, lines 49-55). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the

process of Takagawa by using methanol as a solvent because methanol and the Takagawa solvent have an equivalent function in the process of crystallization of 2,6-DMN.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tam M. Nguyen whose telephone number is (703) 305-7715. The examiner can normally be reached on Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marian Knode can be reached on 703 308 4311. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-5408 for regular communications and (703) 305-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Tam M. Nguyen
Examiner
Art Unit 1764

Tam Nguyen/ TN
May 16, 2002

Walter D. Griffin
Primary Examiner